

**WEST**[Help](#) [Logout](#)[Main Menu](#) [Search Form](#) [Posting Counts](#) [Show S Numbers](#) [Edit S Numbers](#)*Attachment to paper number 20***Search Results -**

Terms	Documents
l4 and (l1 or l2) [clm]	0

**Database:** All Databases (USPT + EPAB + JPAB + DWPI + TDBD) [▼](#)

l4 and (l1 or l2) [clm]

[Refine Search:](#)**Search History**

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
ALL	l4 and (l1 or l2) [clm]	0	<u>L6</u>
ALL	l4 and l3 [clm]	0	<u>L5</u>
ALL	(factor adj2 VIII) [clm]	311	<u>L4</u>
ALL	codon near5 usage\$ [clm]	12	<u>L3</u>
ALL	codon near5 prefer\$ [clm]	4	<u>L2</u>
ALL	codon adj2 prefer\$ [clm]	1	<u>L1</u>

**WEST**     **Search Results - Record(s) 1 through 1 of 1 returned.****1. Document ID: US 5082767 A**

Entry 1 of 1

File: USPT

Jan 21, 1992

US-PAT-NO: 5082767

DOCUMENT-IDENTIFIER: US 5082767 A

TITLE: Codon pair utilization

          

Terms	Documents
codon adj2 prefer\$ [clm]	1

 including document number **Display Format:**

## WEST

[Help](#) [Logout](#)[Main Menu](#) [Search Form](#) [Posting Counts](#) [Show S Numbers](#) [Edit S Numbers](#)**Search Results - Record(s) 1 through 4 of 4 returned.****1. Document ID: US 5464770 A**

Entry 1 of 4

File: USPT

Nov 7, 1995

US-PAT-NO: 5464770

DOCUMENT-IDENTIFIER: US 5464770 A

TITLE: DNA encoding (ASP 113) and (LYS 46, ASP 113) thaumatin I

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KMC](#) [Image](#)**2. Document ID: US 5221624 A**

Entry 2 of 4

File: USPT

Jun 22, 1993

US-PAT-NO: 5221624

DOCUMENT-IDENTIFIER: US 5221624 A

TITLE: DNA encoding (Lys.sup.46, Asp.sup.97, Asp.sup.113) and (Lys.sup.46, Asp.sup.137) thaumatin I polypeptides

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KMC](#) [Image](#)**3. Document ID: US 5082767 A**

Entry 3 of 4

File: USPT

Jan 21, 1992

US-PAT-NO: 5082767

DOCUMENT-IDENTIFIER: US 5082767 A

TITLE: Codon pair utilization

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KMC](#) [Image](#)**4. Document ID: US 4652639 A**

Entry 4 of 4

File: USPT

Mar 24, 1987

US-PAT-NO: 4652639

DOCUMENT-IDENTIFIER: US 4652639 A

TITLE: Manufacture and expression of structural genes

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KMC](#) [Image](#)

## WEST

[Help](#) [Logout](#)[Main Menu](#) [Search Form](#) [Posting Counts](#) [Show S Numbers](#) [Edit S Numbers](#)**Search Results - Record(s) 1 through 10 of 12 returned.****1. Document ID: US 5917122 A**

Entry 1 of 12

File: USPT

Jun 29, 1999

US-PAT-NO: 5917122

DOCUMENT-IDENTIFIER: US 5917122 A

TITLE: Tetracycline repressor-mediated binary regulation system for control of gene expression in transgenic mice

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KWMC](#) [Image](#)**2. Document ID: US 5885571 A**

Entry 2 of 12

File: USPT

Mar 23, 1999

US-PAT-NO: 5885571

DOCUMENT-IDENTIFIER: US 5885571 A

TITLE: Bacillus thuringiensis strains and their insecticidal proteins

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KWMC](#) [Image](#)**3. Document ID: US 5879907 A**

Entry 3 of 12

File: USPT

Mar 9, 1999

US-PAT-NO: 5879907

DOCUMENT-IDENTIFIER: US 5879907 A

TITLE: Artificial gene coding for authentic human serum albumin, use thereof and method

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KWMC](#) [Image](#)**4. Document ID: US 5804409 A**

Entry 4 of 12

File: USPT

Sep 8, 1998

US-PAT-NO: 5804409

DOCUMENT-IDENTIFIER: US 5804409 A

TITLE: Production of active Pseudomonas glumae lipase in homologous or heterologous hosts

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Claims](#) [KWMC](#) [Image](#)**5. Document ID: US 5654177 A**

Entry 5 of 12

File: USPT

Aug 5, 1997

US-PAT-NO: 5654177  
DOCUMENT-IDENTIFIER: US 5654177 A  
TITLE: Production of human somatomedin C

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Image](#)

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**6. Document ID: US 5641671 A**

Entry 6 of 12 File: USPT Jun 24, 1997

US-PAT-NO: 5641671  
DOCUMENT-IDENTIFIER: US 5641671 A  
TITLE: Production of active Pseudomonas glumae lipase in homologous or heterologous hosts

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Image](#)

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**7. Document ID: US 5567862 A**

Entry 7 of 12 File: USPT Oct 22, 1996

US-PAT-NO: 5567862  
DOCUMENT-IDENTIFIER: US 5567862 A  
TITLE: Synthetic insecticidal crystal protein gene

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Image](#)

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**8. Document ID: US 5567600 A**

Entry 8 of 12 File: USPT Oct 22, 1996

US-PAT-NO: 5567600  
DOCUMENT-IDENTIFIER: US 5567600 A  
TITLE: Synthetic insecticidal crystal protein gene

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Image](#)

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**9. Document ID: US 5552299 A**

Entry 9 of 12 File: USPT Sep 3, 1996

US-PAT-NO: 5552299  
DOCUMENT-IDENTIFIER: US 5552299 A  
TITLE: Plasmids and process for producing recombinant desulphatohirudin HV-1 peptides

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Image](#)

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**10. Document ID: US 5380831 A**

Entry 10 of 12 File: USPT Jan 10, 1995

US-PAT-NO: 5380831  
DOCUMENT-IDENTIFIER: US 5380831 A  
TITLE: Synthetic insecticidal crystal protein gene

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Image](#)

**WEST**     **Search Results - Record(s) 11 through 12 of 12 returned.****11. Document ID: US 5276268 A**

Entry 11 of 12

File: USPT

Jan 4, 1994

US-PAT-NO: 5276268

DOCUMENT-IDENTIFIER: US 5276268 A

TITLE: Phosphinothricin-resistance gene, and its use

          **12. Document ID: US 5082767 A**

Entry 12 of 12

File: USPT

Jan 21, 1992

US-PAT-NO: 5082767

DOCUMENT-IDENTIFIER: US 5082767 A

TITLE: Codon pair utilization

          

Terms	Documents
codon near5 usage\$ [clm]	12

including document number

Display Format:

## WEST

[Help](#) [Logout](#)

Main Menu	Search Form	Result Set	Show S Numbers	Edit S Numbers	Referring Patents
First Hit		Previous Document		Next Document	
Full	Title	Citation	Front	Review	Classification
Date	Reference	Claims	KUMC		

## Document Number 4

Entry 4 of 4

File: USPT

Mar 24, 1987

US-PAT-NO: 4652639

DOCUMENT-IDENTIFIER: US 4652639 A

TITLE: Manufacture and expression of structural genes

DATE-ISSUED: March 24, 1987

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stabinsky; Yitzhak	Boulder	CO	N/A	N/A

US-CL-CURRENT: 435/91.52; 435/320.1, 435/69.4, 435/91.53, 536/23.1,  
930/80

## CLAIMS:

What is claimed is:

1. A method for synthesis of linear, double stranded DNA sequences from nucleotide bases comprising the steps of:
  - (1) synthesizing from nucleotide bases two or more different, linear, duplex DNA strands, each duplex strand comprising a double stranded region of 12 or more selected complementary base pairs and further comprising at least one single stranded terminal sequence of from 3 to 7 selected bases at one end of the strand, each single stranded terminal sequence of each duplex DNA strand comprising the entire base complement of at most one single stranded terminal sequence of any duplex DNA strand prepared; and
  - (2) annealing and ligating each duplex DNA strand prepared in step (1) to one or two different duplex strands prepared in step (1) having a complementary single stranded terminal sequence, thereby to form a single continuous double stranded DNA sequence which has a duplex region of at least 27 selected base pairs comprising at least 3 base pairs formed by complementary association of single stranded terminal sequences of duplex DNA strands prepared in step (1) and which has from 0 to 2 single stranded terminal regions of from 3 to 7 bases.
2. A method according to claim 1 wherein at least three different duplex DNA strands are prepared in step (1) and all strands so prepared are annealed and ligated concurrently in a single annealing and ligating reaction mixture to form a single continuous double stranded DNA sequence which has a duplex region of at least 42 selected base pairs comprising at least two non-adjacent sets of 3 or more base pairs formed by complementary association of single stranded terminal sequences of duplex strands prepared in step (1).
3. A method according to claim 1 wherein the duplex DNA strand preparation step (1) comprises the steps of:
  - (a) constructing first and second linear oligodeoxynucleotide segments having 15 or more bases in a selected linear sequence, the linear sequence of bases of said second segment comprising the total complement of the sequence of bases of said first segment except that at least one end of said second segment shall either comprise an

additional linear sequence of from 3 to 7 selected bases beyond those fully complementing said first segment, or shall lack a linear sequence of from 3 to 7 bases complementary to a terminal sequence of said first segment, provided, however, that said second segment shall not have an additional sequence of bases or be lacking a sequence of bases at both of its ends; and,

(b) combining said first and second segments under conditions conducive to complementary association between segments to form a linear, duplex DNA strand.

4. A method according to claim 1 wherein the continuous double stranded DNA sequence formed in step (2) comprises an entire structural gene expressable in a selected host microorganism as a composition comprising a biologically functional protein.

5. A method according to claim 4 wherein, in the double-stranded DNA sequence formed, the sequence of bases comprises one or more codons selected, from among alternative codons specifying the same amino acid, on the basis of preferential expression characteristics of the codon in a projected host microorganism.

6. A method according to claim 1 further comprising the step of labelling the double-stranded DNA sequence formed in step (2) with a detectable signal for use as a reagent material.

7. The method according to claim 6 wherein said signal is .sup.125 I.

Main Menu	Search Form	Result Set	Show S Numbers	Edit S Numbers	Referring Patents
First Hit	Previous Document	Next Document			
Full	Title	Citation	Front	Review	Classification
Date	Reference	Claims	KOMC		

[Help](#) [Logout](#)

---

## WEST

Help Logout

Main Menu | Search Form | Result Set | Show S Numbers | Edit S Numbers | Referring Patents |  
 First Hit | Previous Document | Next Document |  
 Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC |

## Document Number 3

Entry 3 of 12

File: USPT

Mar 9, 1999

US-PAT-NO: 5879907

DOCUMENT-IDENTIFIER: US 5879907 A

TITLE: Artificial gene coding for authentic human serum albumin, use thereof and method

DATE-ISSUED: March 9, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Aberg; Bertil	Stockholm	N/A	N/A	SEX
Simoncsits; Andras	Stockholm	N/A	N/A	SEX
Kalman; Miklos	Szeged	N/A	N/A	HUX
Cserpan; Imre	Szeged	N/A	N/A	HUX
Bajszar; Gyorgy	Szeged	N/A	N/A	HUX

## ASSIGNEE INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Skandigen AB	Stockholm	N/A	N/A	SEX	03
MTA Szegedi Biologial Kozpontja	Szeged	N/A	N/A	HUX	03
Vepex Contractor Ltd.	Budapest	N/A	N/A	HUX	03

APPL-NO: 7/ 884274

DATE FILED: May 13, 1992

## PARENT-CASE:

This application is a Continuation of application Ser. No. 07/466,417, filed May 1, 1990, now abandoned, which is a 371 of PCT/SE88/00470, filed Sep. 13, 1998.

## FOREIGN-APPL-PRIORITY-DATA:

## FOREIGN-PRIORITY:

FOREIGN-PRIORITY-APPL-NO: SE 8703539

FOREIGN-PRIORITY-APPL-DATE: September 14, 1987

INT-CL: [6] C12 N 15/81, C07 H 21/04

US-CL-ISSUED: 435/69.1; 435/172.3, 435/252.33, 435/254.2, 435/254.21, 435/320.1, 536/23.1, 536/23.5

US-CL-CURRENT: 435/69.1; 435/252.33, 435/254.2, 435/254.21, 435/320.1, 435/91.4, 435/91.41, 435/91.53, 536/23.1, 536/23.5

FIELD-OF-SEARCH: 435/69.1, 435/69.2, 435/69.4, 435/172.1, 435/172.2, 435/172.3, 435/69.6, 435/320.1, 435/252.3, 435/252.33, 435/254.2,

435/254.21, 536/27, 536/28, 536/23.1, 536/23.5, 530/350, 530/351, 530/387, 530/362, 530/363, 530/385, 530/386, 530/388, 530/389

## REF-CITED:

U. S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4695623</u>	September 1987	Stabinsky	530/351
<u>5013652</u>	May 1991	Strausberg et al.	435/69.2

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY
079 739	May 1983	EP
123 544	October 1984	EP
0 182 383	May 1986	EP
0206733	December 1986	EP
206 733A	December 1986	EP
2 105 343	March 1983	GB
WO 83/04053	November 1983	WO
WO 87/07144	December 1987	WO

ART-UNIT: 165

PRIMARY-EXAMINER: LeGuyader; John L.

ATTY-AGENT-FIRM: Bacon &amp; Thomas

## ABSTRACT:

A structural gene coding for authentic human serum albumin, --optionally supplemented by an upstream triplet coding for methionine and optionally extended by a synthetic prepro.sup.x -leader-coding sequence--, wherein the codons of the nucleotide sequence have been selected with regard to a non-human host, e.g. yeast, chosen for expression of authentic human serum albumin, is disclosed.

Additionally there is disclosed a method of producing said gene.

There are also disclosed a recombinant DNA molecule comprising said structural gene inserted into a vector, and a host transformed with said recombinant DNA molecule.

Furthermore there are disclosed a method of producing authentic human serum albumin, an authentic human serum albumin resulting from said method, and a pharmaceutical composition comprising said resulting human serum albumin.

10 Claims, 15 Drawing figures

Main Menu	Search Form	Result Set	Show S Numbers	Edit S Numbers	Referring Patents				
First Hit		Previous Document		Next Document					
Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC

[Help](#)[Logout](#)